The World Food Prize

"The Borlaug Dialogue"

The 2006 Norman E. Borlaug International Symposium

The Green Revolution Redux

October 18 - 20, 2006 • Des Moines, Iowa

The World Food Prize Twentieth Anniversary Highlights

Muhammad Yunus Wins Nobel Peace Prize

Just before the 2006 World Food Prize activities began, it was announced that the Nobel Peace Prize would again honor a pioneer in the fight against poverty – Dr. Muhammad Yunus of Bangladesh. Dr. Yunus had received the World Food Prize in Des Moines twelve years prior at a ceremony with fellow Nobel Peace Prize Laureates Dr. Norman Borlaug and President Jimmy Carter, a member of our Council of Advisors. The photo from that 1994 ceremony features (l-r) Dr. Borlaug, President Carter, World Food Prize Chairman John Ruan and Dr. Muhammad Yunus.

Borlaug Awarded Congressional Gold Medal

Shortly after this year's symposium, the United States federal government announced that Dr. Borlaug would receive the Congressional Gold Medal for his ongoing efforts on behalf of the world's hungriest. With the Nobel Peace Prize, the Presidential Medal of Freedom, and this most recent honor, Dr. Borlaug is certainly – and most deservingly – one of the most decorated living American and world citizens.

At the 2006 "Borlaug Dialogue," Dr. Borlaug shared his thoughts on the new Gates-Rockefeller Initiative to bring the Green Revolution to Africa.

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Brazilian Breakthroughs Honored

In 2006, Edson Lobato and Alysson Paolinelli of Brazil and Colin McClung of the United States were awarded the World Food Prize for opening more than 100 million hectares of land in Brazil to agricultural production. Over 700 people representing more than 65 countries attended the Laureate Award Ceremony where the Laureates were formally honored for their spectacular achievement. See highlights of the ceremony and read about their accomplishments.

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Borlaug Medallion to Thai King

As a special commemoration of the World Food Prize Twentieth Anniversary, the Dr. Norman E. Borlaug Medallion was established to recognize world leaders whose actions have benefited mankind but who would not normally be considered for the World Food Prize. His Majesty King Bhumibol Adulyadej of Thailand was announced as the first recipient.

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Secretary Johanns Looks to the Future

United States Secretary of Agriculture Mike Johanns delivered the first annual Secretary's Address, focusing on advancing American and global agriculture.

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Amb. Sheeran to Head World Food Programme

U.S. Under Secretary of State for Economic, Energy and Agricultural Affairs Josette Sheeran was named new Executive Director of the World Food Programme weeks after speaking at the 2006 Norman E. Borlaug International Symposium.

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Robert Gates Named Secretary of Defense

Just six weeks after his appearance at the Norman E. Borlaug International Symposium, Robert Gates was confirmed as the United States Secretary of Defense. Read his candid remarks on the future of food and global security.

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Introducing...
The Borlaug Dialogue

- Ambassador Kenneth M. Quinn
President, The World Food Prize Foundation

"The Borlaug Dialogue welcomed over 700 participants from 66 countries."

As part of our Twentieth Anniversary, we renamed our conference "The Norman E. Borlaug International Symposium," to be known informally as "The Borlaug Dialogue." Our goal is to have our annual event be the place where the most cutting-edge topics and newest ideas are discussed.

As a first step the "Borlaug Dialogue" hosted a diverse array of groups, who came to have their own adjunct meetings and then attend the World Food Prize, including:

- Over 60 USDA International Borlaug Fellows
- USAID's Board for International Food and Agricultural Development (BIFAD)
- A meeting on the U.S. - India Agricultural Knowledge Initiative (AKI)
- The Partnership to Cut Hunger and Poverty in Africa and African Ambassadors' Tour
- Truth About Trade and Technology's Global Farmer-to-Farmer Roundtable
- Kemin Industries' World Scientific Congress
- The U.S. Grains Council's International Biotechnology Information Seminar

Peter McPherson of our Council of Advisors summed it up perfectly: "This is where we come to have our conversations."

Secondly, we restructured the format of the "Borlaug Dialogue," adding more panel sessions featuring greater interaction and "conversations" among the participants.

Third, there was a dialogue among generations with 80 high school students from across Iowa, six other U.S. states, Brazil, and Nigeria participating in the World Food Prize Global Youth Institute.

It is with the quality of the "conversations" at our World Food Prize events that we hope to foster greater dialogue and dedication among the world's thinkers and actors, as well as the next generation, to follow in the footsteps of Dr. Borlaug and the World Food Prize Laureates.

This year's theme, "The Green Revolution Redux: Can We Replicate the Single Greatest Period of Food Production in All Human History?" attracted a dazzling array of speakers from around the world and sparked a great deal of compelling discussion, the most salient points of which are excerpted in this brochure. Full transcripts are available at **www.worldfoodprize.org**.

"This is where we come to have our conversations."

U.S. - India AKI Session

Following their participation in a session on the U.S. - India Agricultural Knowledge Initiative, Dr. Norman Borlaug and USDA Deputy Under Secretary for Farm and Foreign Agricultural Services Ellen Terpstra presided over the Norman E. Borlaug International Fellows Luncheon.

USDA Norman Borlaug Fellows

Participants in the Borlaug Fellows Luncheon, representing 15 countries, heard from speakers on issues of sustainable agriculture and were able to interact with their colleagues from around the world.

BIFAD National Forum

BIFAD Chairman M. Peter McPherson shared a few words with Indian Ambassador Ranendra Sen (left) and U.S. Under Secretary of State for Economic, Energy and Agricultural Affairs Josette Sheeran following the opening session of the symposium.

A Conversation On...

The Green Revolution: Looking Back, Looking Forward

Ambassador Quinn presided over the opening session, which included (l-r) World Food Prize Chairman John Ruan III; Council of Advisors member Al Clausi; 2006 World Food Prize Laureates Edson Lobato, Alysson Paolinelli and Dr. Colin McClung; Council of Advisors member Sir Gordon Conway; Ambassador Josette Sheeran; Humanities Iowa President Jeff Heland; and Executive Vice President of Soil Science Society of America Ellen Bergfeld

Amb. Quinn acknowledged World Food Prize Chairman Emeritus John Ruan, founder Dr. Norman Borlaug and Chairman John Ruan III for their roles in the twenty year history of the World Food Prize.

World Food Prize Laureates H.E. He Kang of China and Dr. Surinder Vasal of India listen with great interest to the panel.

Panel member Scott Kilman of the Wall Street Journal answers a question as fellow panel members (l-r) Dr. Ismail Serageldin, Dr. M.S. Swaminathan and Roger Thurow look on.

Great ideas are born at the Norman E. Borlaug International Symposium not only through discussions on stage, but through conversations in the audience.

Sir Gordon Conway

Chief Scientific Advisor,
Department for International Development
United Kingdom

"Economic growth for sub-Saharan Africa is going to depend on agricultural growth. But if sustainable agriculture doesn't cope with climate change, it's not going to be sustainable."

Looking Back, Looking Forward: Major Accomplishments and Challenges

"Decades ago, when Dr. Borlaug said, 'Let's put fertilizer on these new varieties and get the yields up,' they fell over, they lodged. Lodging was the challenge that spurred Dr. Borlaug's work, and was, in a sense, at the heart of the Green Revolution and its success. Predictions now are for greater drought in Africa. We need to look at drought today the way Dr. Borlaug looked at lodging. That's the big challenge for the next 50 years."

"Nearly all of Africa is food deprived. Part of the reason is the low level of cereal yields. China has four to five tons per hectare; South Asia has over two tons. Sub-Saharan Africa is absolutely flat at one ton per hectare. That's the production Britain had under the Roman Empire."

"There were limitations to the Green Revolution. It tended to focus on ideal environments. It relied heavily on synthetic pesticides. Not all the poor benefited, and it passed Africa by. And today we see the consequences – 800 million people chronically undernourished; 180 million children severely underweight; 400 million women anemic when they give birth."

"You can see the lack of increase in developing countries' cereal yields. Except, interestingly, in maize, and that is fueled by the need to feed animals. There's a certain irony in the world that when we want to feed animals, we get great big increases in yields. When we want to feed humans, we don't."

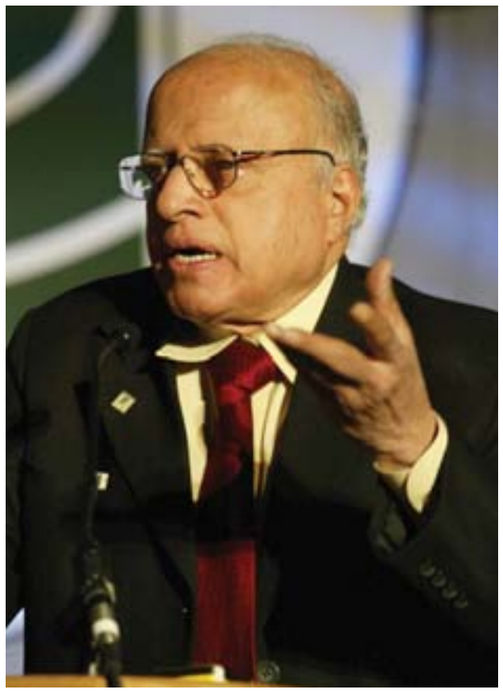
Third Annual Governor's Lecture

sponsored by Humanities Iowa

Dr. M.S. Swaminathan

Chair, M.S. Swaminathan Research Foundation
1987 World Food Prize Laureate
India

"The way ahead is a paradigm shift from a Green to an Evergreen Revolution. Gandhi said most problems can be solved by conversation and consensus building. Our ability to face the challenges of global warming and rising sea levels will depend on our ability to harmonize and resolve differences within organic farming and the new genetics. "



Reflections on the Green Revolution in India

"Can Malthus continue to be wrong? Can we continue? Yes, provided we are able to adopt technologies which can enhance productivity in perpetuity without associated ecological harm. Many neo-Malthusian predictions largely arise from problems: climate change, environmental degradation. So how do we increase productivity in perpetuity, without associated ecological harm? That is the question now."

"Most of the people who are hungry are landless laborers. The real poor are those who have no assets at all. Government policy should be to see what kind of assets, including livestock, can be given. Unless we have a comprehensive asset reform— land, livestock, fish ponds, or some productive asset like skilled work – they will just yearn."

"The effect of the Asian tsunami was reduced where there were heavy mangrove plantations, or other bioshields, acting as a speed breaker. Now people are taking interest in replanting mangroves and are reclaiming the old mangrove areas. And biotechnologists in my laboratory have mapped the mangrove genome, identified the genes responsible for seawater tolerance, and transferred it to rice, to mustard and many other crops."

"Uncommon opportunities are opened up by modern technology. Biotechnology is one. But more important immediately is information technology, because there's a great knowledge deficit. Today we can leapfrog in terms of communication, by mobilizing all the tools, whether the Internet, cable TV, FM radio, community radio, or cell phones."

Dr. Ismail Serageldin
Director,
Library of Alexandria
Egypt

"We have transformed over 40 percent of the land on the planet. We're using close to 60 percent of available water. About 60 percent of all nitrogen fixed is by our fertilizer. If you want to support the environment, support agricultural intensification, support the Green Revolution – because the most important environmental action is to reduce land under cultivation."

Roger Thurow
Senior Writer,
The Wall Street Journal
United States

"How dare we have brought hunger with us into the 21st century? Dr. Borlaug showed the world the way to boost food production and end hunger. But the world didn't follow through. We got busy and distracted by the pursuit of other holy grails. The generation that has given us the Internet has failed to feed all of its people."

The Ten Commandments of Global Agriculture*

"The developed world funnels nearly $1 billion a day in subsidies to its farmers – six times the total development assistance for all sectors, everywhere in the world. A cow in the European Union receives a subsidy of $2.2 dollars a day – more than 2.5 billion people receive. An African leader said that if there is reincarnation, we should come back as European cows. For no effort, we'll redouble our incomes."

"Production is a necessary but not sufficient condition for food security. But that doesn't mean that it's therefore unimportant. Distribution is important, but with less production we have higher prices and less access. Production is extremely important."

"We need more crop per drop. It takes one liter to produce one calorie of food on average. It takes about 2,000 to 4,000 tons of water to produce a ton of rice, and much of it is used in a fairly inefficient fashion. We need to think differently about yields. Yields have so far only been tons per hectare. We need to think of them as output per unit of water, and energy and labor content as well."

"Obesity is on the rise everywhere, in the rich and poor countries. We need to diversify away from the five crops - the coarse grains - that account for almost 95% of human consumption to more nutritious grains. There's a lot of things that have to be done on diet for the health of the individuals as well as the health of the planet."

** For a full list of Dr. Serageldin's Ten Commandments of Global Agriculture, please visit www.worldfoodprize.org*

From Food Production to Hunger Reduction: In Search of the Missing Link

"The Ethiopian famine of 2003 was a perfect storm of famine and hunger, a massive crime scene that exposed the failure to extend the Green Revolution to Africa. It illuminated what would be needed to make a second Green Revolution fully blossom – to push the boundaries beyond the fields to markets, roads, rural infrastructure, and policy change to aid farmers and reduce their risks."

"Unlike the daunting challenges that face us on other fronts – eliminating AIDS, finding a vaccine for malaria, curing cancer – when it comes to boosting agriculture production, the scientific breakthroughs have already been achieved. Now we only need the will, both popular and political, and the moral imperative to do it."

"In 1984 we pledged, 'Never again!,' but what have we done to back that up? A series of initiatives helped Ethiopian farmers boost production at the same time the government was being pressured to withdraw state support from the farming sector. There were no subsidies as in the U.S. and Europe. In 2003 the U.S. provided $500 million in food aid to Ethiopia but spent less than $5 million in agricultural development assistance there. We paid to feed the Ethiopians, but not to help them grow their own food."

"While Egypt has millions of acres irrigated by thousands of miles of canals, Ethiopia has less than 500,000 acres of irrigated land. The land that feeds the Nile is unable to feed itself. Has the international community changed its water policy to help fulfill the 1984 'Never again!' pledge?"

HON. MIKE JOHANNS
Secretary of Agriculture
UNITED STATES

The Inaugural Secretary's Address:

ADVANCING AMERICAN AND GLOBAL AGRICULTURE

"This is a dynamic time in agriculture, maybe the most dynamic time in my life. It could be as revolutionary as the agriculture of past decades if we seize the opportunities before us."

"The breakthroughs of tomorrow might be nothing more than experiments that invoke a lot of skepticism today. For private companies, the risk might be too great. It is vital for government researchers to stay connected to our private sector. The more closely we are linked, the more our research dollars will ensure that the amazing story of agriculture continues."

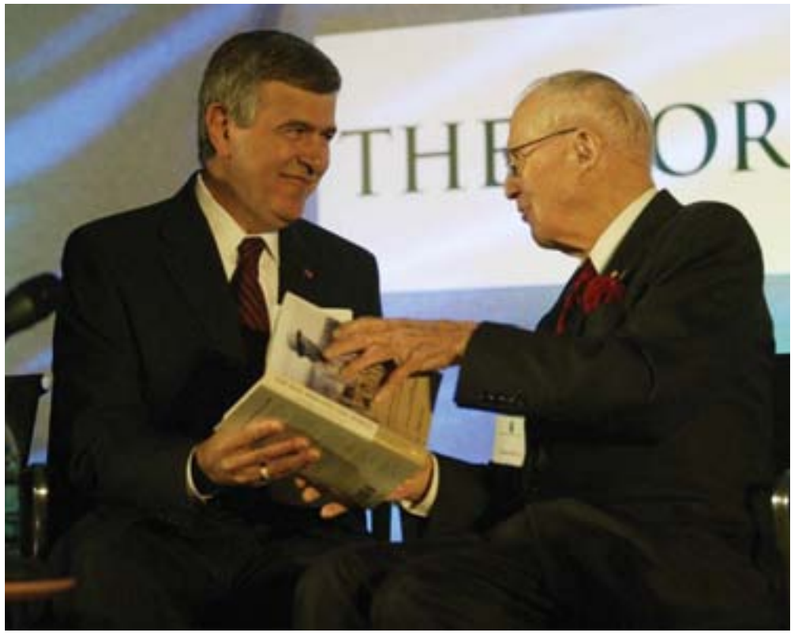
"In the United States productivity continues to grow 2 percent each year. Over 50 years we've tripled the amount of milk produced by an average cow and quadrupled the amount of corn harvested from a single acre."

"Agriculture is the second-largest contributor to the Iraqi economy, only behind oil, but Iraqi agriculture was choked by years of neglect. Through the Iraq Agriculture Extension Revitalization Program, land grant universities will train Iraqis to become extension agents who will, in turn, provide technical assistance crucial to ensure both a plentiful food supply and a stable economy."

"Iron deficiency is the most serious nutritional deficiency worldwide. It is estimated to plague 30 percent of the world's population. It reduces cognitive function and can be deadly. We have developed a strain of rice that allows the body to absorb more iron. We have developed a breed of corn to increase iron absorption up to 50 percent. Research is only the very first step. What we learn in the lab we must teach our farmers to apply in the field."

"International trade is another piece of the puzzle to address world hunger. We have before us a once-in-a-generation opportunity to have a profound impact on hunger and poverty."

"Roughly half of the global economic benefit from free trade would be enjoyed by developing countries. It could lift as many as 500 million people out of poverty and inject $200 billion annually into developing economies. It far surpasses anything being done in aid. It's not an exaggeration to say that lives are depending upon our success. A former president of a least-developed country said, 'The wrong policy on agriculture might lose elections in France, but it loses lives in Africa.'"



Prior to his address, Secretary Johanns was presented with an autographed copy of Dr. Norman Borlaug's biography, "The Man Who Fed the World."

A Conversation On...
Agriculture and Development in Africa

"Many people still perceive Africa as a continent with problems and hunger. Usually when you are looking for bad things, you will get them everywhere. There is an opportunity for people to invest in our countries and satisfy this market. But because of the perceptual issues that are still around, it's not easy to go there and invest."

- H.E. Zac Nsenga
Ambassador of Rwanda

"The best thing that ever happened to us was the collapse of the Berlin Wall. Now we're accountable to everybody else, and we expect accountability from our development partners. We still face huge challenges. But the best thing that ever happened to us was to openly discuss issues and place issues on the table."

- H.E. Peter Ogego
Ambassador of Kenya

"Regional markets have their importance, but imagine the situation where Tanzania and Mozambique both produce cashew nuts. I don't know who is going to sell cashew nuts to whom. So in addition to regional markets, on which we place so much importance, we need a global market so that both Mozambique and Tanzania can sell the cashew nuts they produce, rather than selling to one another."

- H.E. Andrew Daraja
Ambassador of Tanzania

"Our partners should not be reluctant to develop our infrastructure, because a country without infrastructure cannot do much. Our development partners want projects in our capitals, which are more or less developed. But we want emphasis in the rural areas."

- H.E. Armando Panguene
Ambassador of Mozambique

"Africa is focusing on regional integration. We want to build economies, to link our countries, to put our capacities together. One of the major issues is infrastructure. In the U.S., road infrastructure, having the highways to link the states, impacted development. If we had the same system in Africa, the ingenuity of the African people would do what remained to be done."

- H.E. Abdoulaye Diop
Ambassador of Mali

M. Peter McPherson

Chair, Board for International Food & Agricultural Development
Founding Co-Chair, Partnership to Cut Poverty & Hunger in Africa
President, NASULGC
United States

"In 1960 Africa had twice the per capita income of Asia. Africa's per capita income hasn't moved much; Asia's has exploded. You can say Africa didn't work. But you can also say, in 1960, a lot of Asia looked pretty hopeless. We can look at Africa today and see a number of very positive things to build on."

"There Is Reason to be Cautiously Optimistic"

"In the private sector, cell phones are expanding by millions a year in Africa. That's not just a convenience; that's a change in the economic structure. And in a number of countries the majority of food not consumed by the farmer is purchased through supermarkets. In this country, we had the supermarket revolution in the thirties and forties and into the fifties. Supermarkets invigorate an economy and often force producers to produce more uniform quality."

"For a couple years now we've had pretty good growth in Africa – not the 10 percent that China had for 25 years, a phenomenal story, but we've had 6 percent or so growth. And then you break that down and you look at individual countries. A number of countries have had 5 to 6 percent growth over a number of years."

"The continent cannot be built on 12th grade education alone. We need to build and strengthen current universities – and it needs to be beyond that. The Web has shown us a whole different way to educate and expand. We're going to see the possibilities of Web education, particularly what the university community calls 'hybrid education.'"

USAID more and more has become a short-term and disaster relief organization and less of a development agency. More and more into giving fish and less and less into teaching how to fish – and less and less in agriculture. AID money in Africa, in the last five years, was flat. We know that in this fiscal year agriculture is going down again. We basically have backed away from agriculture and from the long-term investment.

H.E. Abdoulaye Diop

Ambassador of Mali
Mali

"Can we replicate the greatest period of food production in history? Yes, we can. We can learn from the Green Revolution in Asia. It took investment in science and technology, capacity building, infrastructure and market development. And it took a long time. When it comes to Africa, people forget these lessons and desire a faster process."

"Africa is Open For Business"

"We must enhance the capacity of our private sector to participate in agricultural development. We must also make agriculture attractive to our youth. They're increasingly disinterested in farming but willing to consider new business opportunities in the rural areas. This is a critical issue that never receives much attention."

"African countries are now experiencing the fastest economic growth in decades. We have GDP growth rate exceeding 5 percent per year, and in some countries reaching 10 percent. With investment and trade opportunities opening up everywhere, we stand at the threshold of a new era."

"Africa is making good progress and is open for business. Africa is a transformed terrain far different from the similar, familiar depiction we observed in the media."

"With 75 percent of our population living in rural areas and depending on agriculture, the most viable strategy of cutting hunger and poverty in Africa is sustained agriculture-led rural economic growth. I encourage increased support for African agricultural development. We can either spend ten years discussing the plight of Africa's poor – or we can start investing to secure a better future for them."

"Greater wealth creation for our people will come from trade. Most African countries are disappointed also by the suspension of Doha Development Round and are hopeful that somehow it will resume."

"We must increase investment in our institutions of higher learning and agricultural research and extension. No country has ever developed without building a strong human resource base."

7 Reasons We Can End Hunger In Our Lifetime

"The most powerful factor in ending hunger is individuals, families, and communities empowered with the tools to feed themselves. Again and again we've seen how determined individuals can and do better the lives of many."

Focus

"In 2000, the world's nations came together in an unprecedented way to share a unified focus on achieving eight clear, measurable goals by 2015. The Millennium Development Goals provide the mandate to rally developing and developed nations alike."

Technical & Policy Revolution

"Can we use technologies, cell phones, computers as a force multiplier for agricultural education, extension programs, best practices, weather forecasts, and commodity markets information? It's already happening. Now even the poorest farmer can potentially access the most up-to-date agricultural knowledge."

The Private Sector

"Private philanthropy is entering the cause of addressing and eradicating the root causes of hunger at an unprecedented level, and there's Green Revolution potential in this partnership. It brings more than money to the table. It brings new levels of efficiency, expertise, and results-based management, including scalability and measurability."

Ownership at the Individual, Village and Country Levels

"Over the last eight months, I've had the chance to travel all over the world as part of Secretary General Kofi Annan's High-Level U.N. Panel looking at coherence in development and humanitarian assistance. We've asked the critical question: How can all U.N. agencies, funds and programs develop and support a strategic country-level approach to reaching these MDG goals?"

"In talking with people, whether villagers in Pakistan rebuilding from the earthquake, or farmers in Haiti fighting the advanced erosion of soil, or presidents and prime ministers in Africa and Latin America, we've met people who know exactly what they need to move from poverty to self-reliance."

Empowerment of Women

"Study after study demonstrates that educating girls is the most powerful development tool we know. According to FAO estimates, women produce more than 50 percent of the food grown worldwide. This is a largely untapped resource in the fight against hunger, because they are too often excluded from access to capital, tools and seeds, and education. A recent World Bank study found that if women received the same education as men, farm yields could rise as much as 22 percent."

Microcredit

"I was very excited that the 1994 World Food Prize Laureate, Muhammad Yunus, won the Nobel Peace Prize for his work with microlending and the Grameen Bank. His goal was to enable the world's poorest people to lift themselves out of poverty through access to financial information and micro-loans. Since its formation in Bangladesh in 1997, the Grameen Bank has created a microfinance network that reaches 2.2 million families in 22 countries."

Commitment and Cooperation

"To rid the world of chronic hunger takes dedication, commitment, and hard work: of the humanitarians in this world that understand food aid, the scientists who have developed improved seed, the economists and agronomists who understand developing world crops and their markets, the anthropologists who understand how to work with communities while introducing new practices, and the courageous frontline hunger troops that deliver food to the malnutritioned, no matter what the obstacles and challenges."

** Ambassador Sheeran was named Executive Director of the World Food Programme following her address at the World Food Prize International Symposium*

A Conversation On...
The Gates-Rockefeller Initiative

"The thing that put the Green Revolution on a commercial basis was the judgment made by political officers. As bureaucracies accumulate, people at the top become conservative. But with problems of overpopulation or land resources, somebody's got to make the decision. The decisive information that gave them the courage to do this was the data developed by the Rockefeller Foundation-sponsored training program. That was the key."

- Dr. Norman E. Borlaug
1970 Nobel Peace Prize Laureate
World Food Prize Founder

"If we talk about agriculture, we have to talk about women. Think about the word 'farmer' – many people don't think 'woman' right off the bat. From an advocacy perspective, it'd be great if there were ways to talk about farmers as women and men. And there have got to be networks so you can talk to women about what their real needs are."

- Catherine Bertini
Professor of Public Administration, Syracuse University
2003 World Food Prize Laureate

"It's very important to educate farmers to keep good technology. We have sent our professors to Africa; we even brought seeds and necessary equipment and technology. At the beginning, it was going very well. But when our experts returned the next year, we found the knowledge we taught disappeared."

- Prof. Zhangliang Chen
President, China Agricultural University

"The world is littered with the results of experts with their pet technology, trying it out, persuading farmers to take it on, walking away, and then it stops. And it's not just Africa. What kind of system allows farmers to make choices so that they feel it's their system, not one that's been imposed?"

- Sir Gordon Conway
Chief Scientific Advisor, United Kingdom Dept. for International Development
President Emeritus, Rockefeller Foundation

Dr. Rajiv Shah
Director, Global Agriculture Programs
Bill and Melinda Gates Foundation
United States

The Bill and Melinda Gates Foundation:

An *Emerging* Approach to Agricultural *Development*

"No major country has moved large numbers of people out of poverty without doing it through sustained agricultural development and production."

"We will be in this space for a long time, because these problems require perseverance and commitment and a long-term dedication to achieve results."

"We focus on things that take a longer period of time and involve a higher level of risk. When we started investing in the development of an HIV vaccine five or six years ago, under $100 million a year was going into HIV vaccine research, whereas cardiovascular drugs and lifestyle improvement products would have $3 to 5 billion dollars a year. So philanthropy can make a real difference."

"It is clear that we need to work through partnerships to be effective. We try to do as much research as we possibly can prior to making investments. But it isn't until you empower your partners to go out and try to create change that you learn what the constraints are."

"How does a private philanthropy support what is essentially industrial development in large, dispersed rural environments? Grants are often not the best tools for getting that done. We recognize there are critical needs, but we're not exactly sure how we use our resources to help make that happen."

"A piece in the *New York Times* talked about suicide rates among small farmers in India – a very powerful demonstration of the life-or-death risks small farmers take. It can be easy for a Seattle-based foundation to expect small farmers to pay valuable and limited resources to adopt technologies. But unless we look at the problem from the perspective of the small farmers and the risk equation they face, we will not be successful over time."

"A striking statistic is that only 20 to 26 percent of smallholder farmers use improved crop varieties. So we're only funding breeding projects that include farmer input in developing crops that they want for those specific areas. That's different from the way work has been done in other environments, but it's critical to adopt the seeds and technologies."

"Over the last 15 years the number of Africans living below the poverty line has increased. Almost 200 million people still suffer from subsistence poverty and hunger. That's a core rationale for why we're making our first investments in Africa, although we will over time expand to other parts of the world."

"We can develop technologies, invest in research and development, even invest in model programs. But unless we can affect large-scale policy and get lots of political will, public opinion and support from variety of actors necessary to create real, sustained change, we will not be successful."

Dr. Shah (holding microphone) participates in a question and answer session with (l-r) Dr. Norman Borlaug, 2003 World Food Prize Laureate Catherine Bertini and China Agricultural University President Dr. Zhangliang Chen.

The World Food Prize
Twentieth Anniversary Celebration

2006 Laureates Edson Lobato, Alysson Paolinelli and A. Colin McClung are presented the World Food Prize by Dr. Norman Borlaug, World Food Prize Chairman John Ruan III, Ambassador Kenneth Quinn and Iowa Lt. Governor Sally Pederson.

The Iowa State Capitol Building is home to the annual World Food Prize Laureate Award Ceremony.

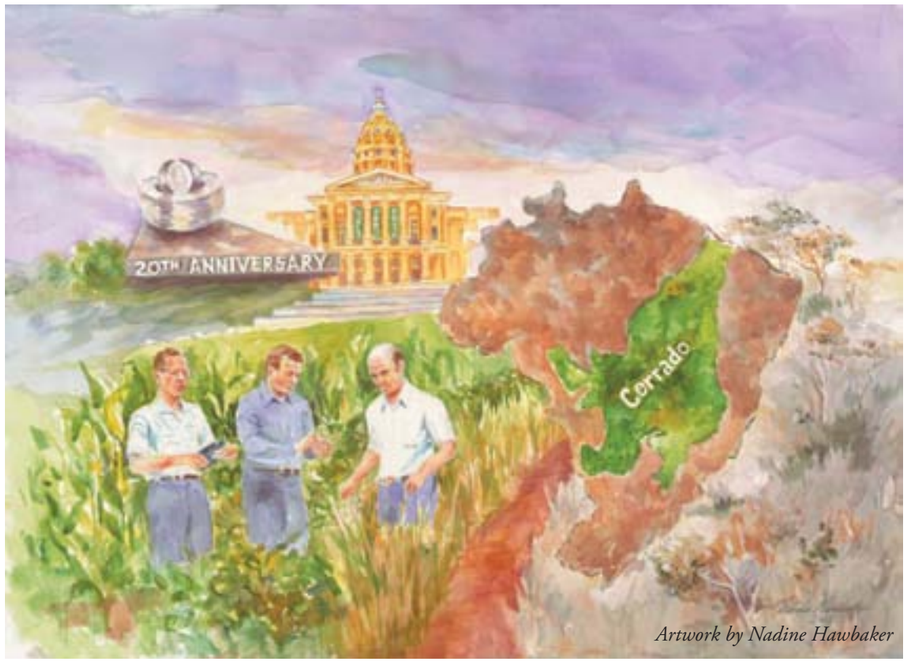
Herald trumpeters announce the beginning of the Laureate Award Ceremony.

Senator Tom Harkin shares the news that the U.S. Senate has passed a resolution honoring Dr. Borlaug with the Congressional Gold Medal. The House of Representatives followed in December and the bill was signed into law by President Bush.

His Excellency Virasakdi Futrakul, Royal Ambassador of Thailand, acknowledges the awarding of the Dr. Norman E. Borlaug Medallion to His Majesty King Bhumibol Adulyadej of Thailand. King Bhumibol was honored for his unwavering dedication to the well being of his subjects, and a deep concern that they have sufficient food and proper nutrition. Recognized by the United Nations as the "Development King," King Bhumibol's projects have benefited millions of people across Thailand.

Emma Flemmig and Rachael Cox are honored as the top Borlaug-Ruan International Interns by Janis Ruan and Michael Gartner.

The 2006 World Food Prize Laureates



Artwork by Nadine Hawbaker

Edson Lobato, Brazil • A. Colin McClung, United States • Alysson Paolinelli, Brazil

Though they worked independently, in different decades and in different fields, the collective efforts of A. Colin McClung, Alysson Paolinelli and Edson Lobato over the past 50 years have unlocked Brazil's tremendous potential for food production. Their advancements in soil science and policy leadership made agricultural development possible in the Cerrado.

Once known only as an arid brush savanna, the Cerrado stretches over 120 million hectares across central Brazil from the western plains to the northeastern coast. With soils characterized by high acidity and aluminum levels that are toxic to most crops, Brazilian farmers had long referred to the area as campos cerrados – "closed land," with little promise for production.

World Food Prize Founder Dr. Norman E. Borlaug called the development of the Cerrado "one of the great achievements of agricultural science in the 20th century," which, "has transformed a wasteland into one of the most productive agricultural areas in the world."

From only 200,000 hectares of arable land in 1955, the Cerrado had well over 40 million hectares in cultivation by the year 2005. The phenomenal achievement of transforming the infertile Cerrado region into highly productive land over a span of fifty years, the world's single largest increase in farmland since the settlement of the U.S. Midwest, has been hailed as a far-reaching milestone in agricultural science with great promise for the future.

"Eventually, the Cerrado technology, or one similar to it, will move into the llanos in Colombia and Venezuela, and hopefully into central and southern Africa where similar soil problems are found," said Dr. Borlaug. "This will bring tens of millions previously marginal acres into high-yield agriculture. Hundreds of millions of people will benefit."

A. Colin McClung, shown here on the border of treated and untreated soils on the Brazilian Cerrado, unlocked the Cerrado's potential for agriculture by concluding that, with a combination of lime, micronutrients and fertilizer, the land could be made suitable for production of crops as diverse as coffee, soybeans, corn and cotton.

"The opening of the Cerrado is one of the great achievements of agricultural science in the 20th century, which has transformed a wasteland into one of the most productive agricultural areas in the world."

- Dr. Norman Borlaug

Nobel Peace Prize Laureate and Father of the Green Revolution

Alysson Paolinelli laid the groundwork needed to expand on Dr. McClung's findings. He helped to dramatically expand Cerrado agriculture through his role as Brazilian Minister of Agriculture and by establishing EMBRAPA.

During the course of his 30-year career, Edson Lobato's work to enhance soil fertility and counteract water stress helped set the stage for the Cerrado's emergence as an agricultural powerhouse, and Brazil's role as a global leader in agriculture.

A Conversation On...
The Transformation of Brazil's Cerrado

2006 World Food Prize Laureate Alysson Paolinelli answers a question from the audience as fellow 2006 Laureates Edson Lobato and A. Colin McClung look on.

"Out of all my experiences I have no doubt that the most complex was running a farm. There is a tendency to believe that this is a simple task. It is not. I've seen a lot of good agronomists fail when running a farm. And in a global economy there is no place for amateurs. We need professionals, and professionals need good technical assistance."

- Edson Lobato
2006 World Food Prize Laureate

"The Brazilian farmer isn't cutting down the Amazon. It's not economical. The cost of deforestation is high; by planting grains, it will take him many, many years to pay that back. We have 42 million hectares of pasture that can be planted. You don't have to cut one tree, the cost of production is much lower, and it recovers the pasture."

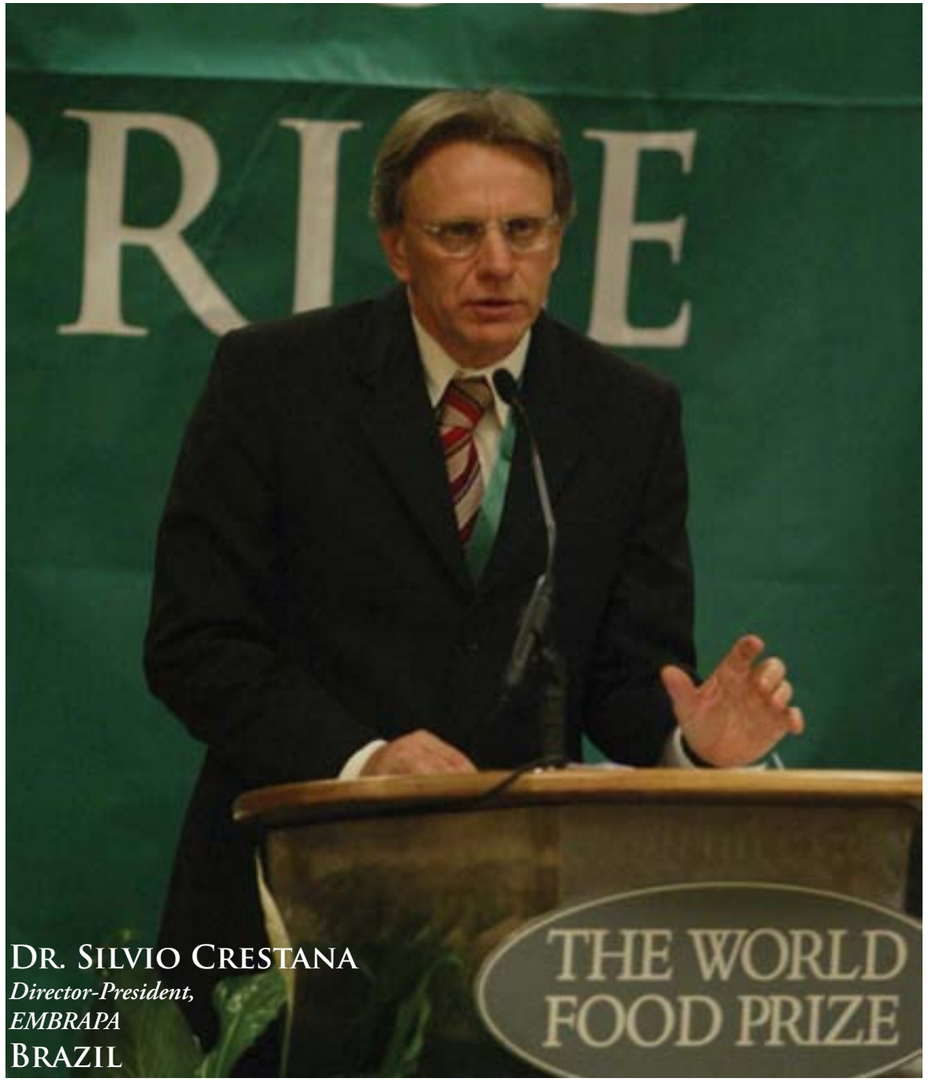
- Alysson Paolinelli
2006 World Food Prize Laureate

"Developing countries are falling further behind in their investment in agricultural research. Think about the implications of that and the difficulties in transferability. You're talking about 80 percent of the world and their support for research getting weaker and weaker all the time."

- G. Edward Schuh
Director, Freeman Center for International Economic Policy

"India and West Africa would jump if they could get involved in the research, send people to Brazil. India would be one that could move quickly on this kind of extrapolation. They have a good central research capacity there. The thing that would catch fire in the other countries would be to see how fantastic it has been in Brazil."

- A. Colin McClung
2006 World Food Prize Laureate



Dr. Silvio Crestana
Director-President,
EMBRAPA
Brazil

The Future of Agriculture: The View from Brazil

"We have a new map of the world today. It's not just geographical, divided by nations' borders, but also by the technological gap. You see the innovation in the Northern Hemisphere, with some adoption of innovation in the south. Developing countries need a strategy for the transition from a raw-material society to a knowledge-based economy driven by innovation."

"The Cerrado today is the most important part of Brazil for agricultural production. We have seen a real revolution in the last thirty years in the Cerrado."

"The knowledge base of the economy was planted 35 years ago in Brazil, with the building of research capability. At the beginning of EMBRAPA in 1974 there were practically zero PhDs in Brazil, a few master degrees and some bachelors. What happened? We increased the number of masters, but we sustained the constant increase of the PhDs."

Notes:
Technology innovators have 10 patents or more per million population in 1997.
Technology adopters have high-tech exports of at least 2 percent of GDP in 1997.
Based on country data for 1997. Some sub-country regions are shaded where the criteria are judged likely to be met.
Source: Center for International Development, 2000

"A wonderful example of degraded lands in the Cerrado being recuperated is through crop-livestock forest integration. You can see eucalyptus, grass, cattle, and it all starts from crops – soybeans, rice, corn. And each hectare of recuperated pasture means 1.8 hectares of forest preserved."

"Rural development is the real solution for a developing country. If you look at cities and the rural areas in Brazil, you'll find Human Development Index increases, higher income, education, health, and jobs. We have a stable food supply. We have been able to lower the base food price and we increased agricultural exports. And we were able to pay the international banks through agriculture."

"We see the responsibility to feed the world. The world, in the next ten years, will need the difference of 168 million tons, which means a 2 percent increase of proteins from soybeans and corn. And to look at the world's areas of productivity, Brazil is close to contributing 85 million tons of soybeans and corn, which means about 7 percent increase – not taking into account the transformation of corn and soybeans into ethanol, biodiesel, and so on."

"Tropical agriculture is a fine case of international scientific cooperation. Brazil has a tremendous advantage because of our tropical knowledge, and we can do a lot in Africa, Asia, and Latin America. That's why we are going to have an office in Ghana for the sub-Saharan countries. This way we can pay back what the developed countries did for us in our training programs."

A Conversation On...
Linking the Public and Private Sectors

Panel members Robert Forney, Hans Jöhr and Mark McLellan discuss strategic alliances to enhance food security.

"Companies compete in areas like coffee, but sustainable agriculture is an area where we can work together successfully. But this illustrates the challenges of finding the win-win here, both economically and environmentally, as well as for companies."

- John Ruff

Senior Vice President, Global Quality, Scientific Affairs and Nutrition, Kraft Foods, Inc.

"We often focus on many different areas, but it's hard to imagine one nearly as important as food safety. Food safety is critical in ensuring maximum benefit to the consumer."

- Dr. Mark McLellan

Dean of Research, University of Florida Institute of Food and Agricultural Science
Former President, Institute of Food Technologists

"There is no single recipe for a private-public partnership. But if you want to be successful, you first must trust each other and agree on what you want to achieve. This is a problem alliances sometimes face, because we have different agendas for what we want to do."

- Hans Jöhr

Assistant Vice President and Corporate Head of Agriculture, Nestlé Ltd.

"There are many reasons an individual or business will help their neighbors. Some are philanthropic, but the sustainable ones, typically, are based on business models and practices. So we need all kinds of partnerships."

- Robert Forney

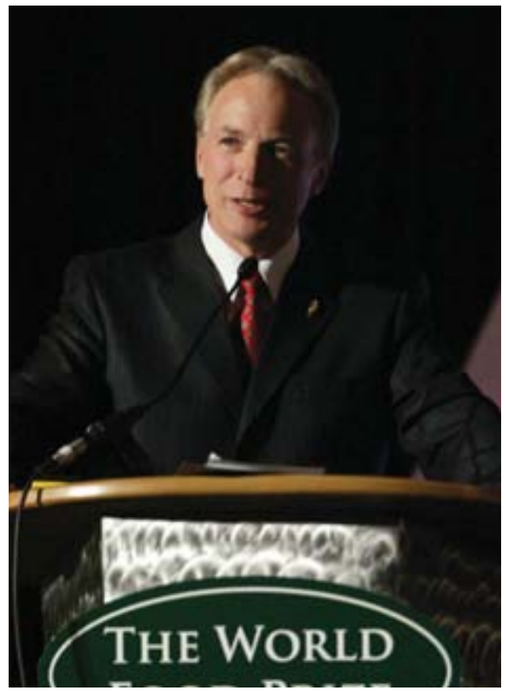
President,
Global Food Banking Network

Hans Jöhr
Corporate Head of Agriculture,
Nestlé, Ltd.
Switzerland

"Last year saw something new – more of the global population living in urban centers. This is going to be an even higher percentage in the future and, more and more, in calorie increase. In twenty years, demand for food in caloric terms will be double today's values."

Dr. Mark McLellan
Dean of Research,
University of Florida Institute of Food & Agricultural Science
United States

"Still today we fight with tremendous post-harvest losses. On a good day, in a good system, we're getting it to 20 percent loss. On a bad day it's far worse, upwards of 50 to 60 percent loss. And this post-harvest loss is the focus of the food scientists' approach."



Sustainable Agriculture and the Food Industry

"Just having more economic growth but not taking care of natural resources will lead to a dead end. The challenge is to break the link between growth and negative environmental impacts."

"With the Sustainable Agriculture Initiative, a lot of things can be done better and done together to supply the future demand. We have got now more than twenty world players onboard tackling the same problems in a pre-competitive way – including all the valuable concepts and initiatives that contribute to sustainable agriculture."

"In many parts of this world, it's not attractive anymore to stay in rural communities if there is a choice to move out. We're losing a lot of people from agriculture and we are losing a lot of knowledge."

"Most important is to link farmers to markets and to generate regular cash flow. In districts in India or Pakistan where we're sourcing fresh milk, if we put one dollar back into rural communities, it generates three to four dollars in local GDP. That starts to improve the farmers' livelihood, you are in business, and the people have a future."

"All these different approaches, standards and guidelines for tackling the same issues, for the same goal, cause problems – mainly for farmers who cannot comply with all the regulatory or private requirements. And it's a nightmare for consumers to understand what's behind all these different approaches. Standardization is urgently needed and will be done only if we have an approach throughout the value chain."

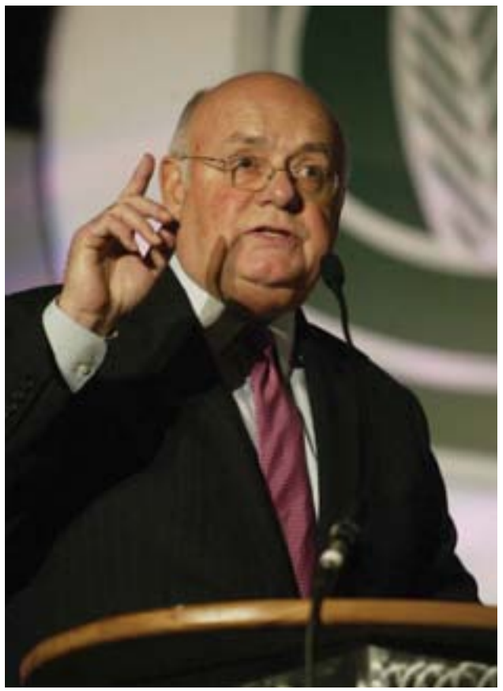
Targeting Science and Technology to Fight Hunger

"Many of us appreciate the raw materials coming off the farm, but most of us would not necessarily take a handful of that and say, 'That's good. We're ready to go – that's dinner for tonight.' Usually we'd like some sort of processing to be done to make those a little bit more edible, a little bit more enjoyable."

"We look at the basic science and engineering of food. We take that basic science and learn to apply it and look at the opportunities to make a difference in the impact of that application. In essence, our focus is all on conversion: as the farm gate closes, how do you manage the movement of that product into various food forms that offer choice, offer opportunity, offer stability, offer longevity in the food supply and the ability to move it into dramatic and long-range feeding opportunities?"

"Bulk aseptic processing is one of the more dramatic changes that has had tremendous impact. You're looking at the capability to produce ultra-large scale quantities of food of high quality, stored for long periods of time and then drawn upon to put into aseptic packaging. It produces one million metric tons of new food products each year that would not be available without that technology."

"That total conversion will result in enough food saved to feed nearly 9 million people annually, extraordinary savings and reduction in post-harvest waste and spoilage. When you see that aseptic package out on the street corner, in the hands of the child or in the supermarket basket, you're looking at, with numbers based on 2003, 1.3 billion liters of food put into an extraordinarily stable system."



Robert Forney
President,
Global Food Banking Network
United States

"Hunger at the roots is an access problem. There may be food in a country, there may be food in a community, there may be food in a neighborhood – but there can still be hunger. Forty percent of the post-harvest crop in Ghana is lost. It's kind of hard to make that up with more supply."

James Morris
Executive Director,
World Food Programme
United Nations

"If we're serious about the Millennium Development Goals, addressing food and hunger and nutrition is the basis of making progress on every one of those issues. If we had a movement that was successful in alleviating child hunger over the next ten or fifteen years, we would meet the MDGs."

Enhanced Public-Private Alignment through International Food Banking

"Corporations are not domiciled in the same country, same community, same neighborhood. They're all over the world. And for us to get maximum support of ideas, volunteers, food and money, it's appropriate to look at carrying our model along with the model of that industry."

"There are more than a thousand food banks worldwide, and they distribute more than 3.5 billion pounds of food annually. Each of these banks sees, on average, about 40,000 people, and they distribute 75 pounds or more of food for each of those people. We reach, though, less than 50 million people. And there are at least 852 million hungry people. So we've got a lot of work to do."

"How can it possibly be that there are indeed more than 852 million people worldwide who face hunger? And worse than that, how can it possibly be, with all the progress we're making, that the number of people who are hungry are growing?"

"Public and private sector anti-hunger resources need to be aligned. There are proven solutions both in supply and access. We need to organize these. Hundreds of thousands of hunger-fighting agencies exist, but they are independently operated. Independently, they do great things. Together – with their voice, their advocacy, their understanding and their hard work – they are much more effective."

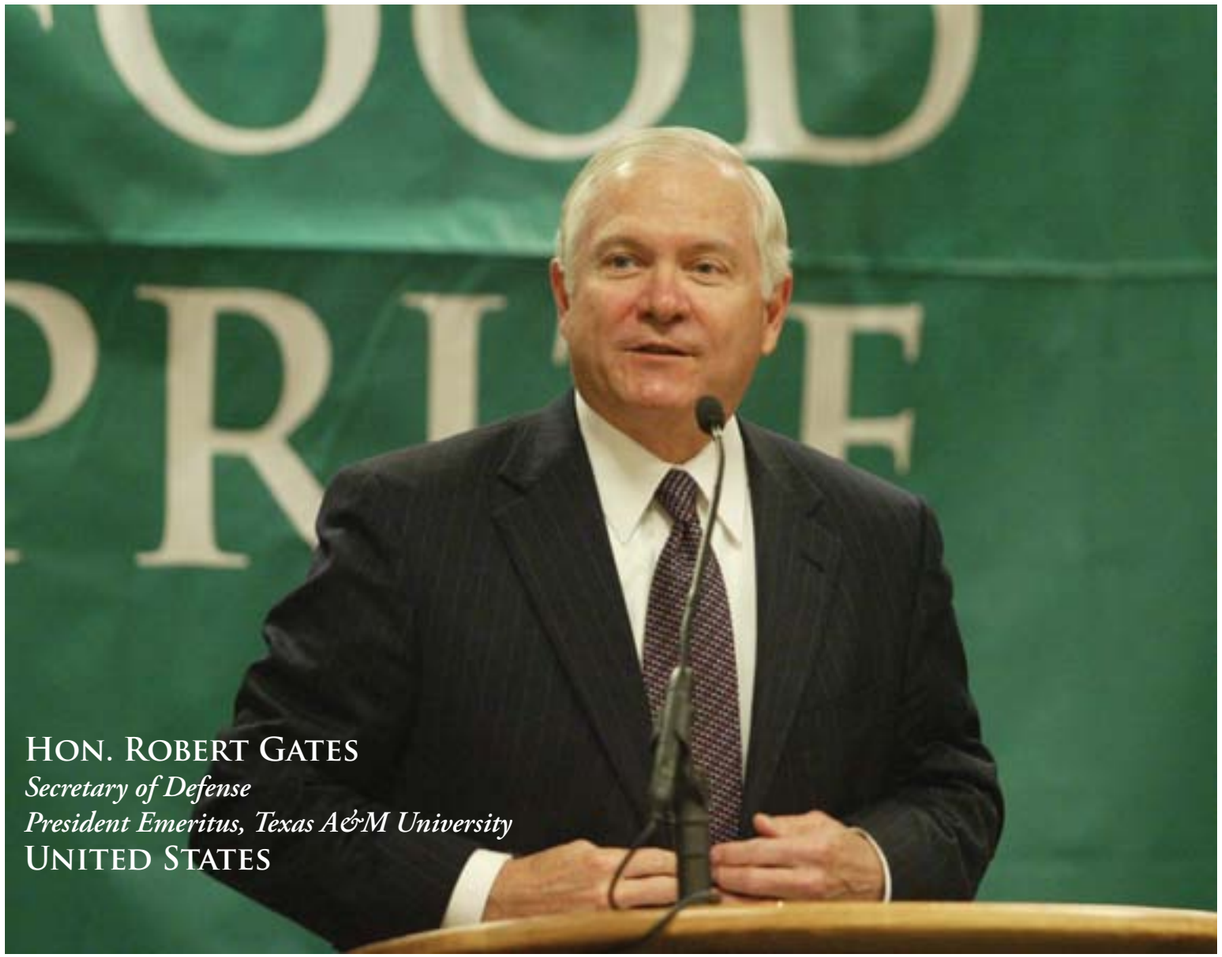
Investing to Win the War on Hunger

"If there's anything that's sinful, shameful, reprehensible, and unacceptable, it's that half the hungry people in the world, more than 400 million, are children. 18,000 children will die today of hunger, one every five seconds, all day long."

"We can feed a child, in school, for a full year for about $35. You feed the little girl in Malawi, you make it possible for her to go to school, she's 50 percent less likely to be HIV-positive, and 50 percent less likely to give birth to a low-birth-weight baby. She'll have children when she's 20, not when she's 12. She'll have two or three, not eight or ten. With a small investment and partnerships around the world, lives are changed."

"Most of the social progress that's been made in the world over the last 25 years is tied to educating women and girls."

"The World Health Organization would tell you that hunger is the most important health issue in the world. UNAIDS would tell you that the most important factor in the fight against HIV is nutrition and clean water. The World Bank would tell you the most important investment any country can make is in the nutritional well-being of its children. If they are born to healthy mothers and have good nutrition the first 24 to 36 months of life, they have the opportunity to become extraordinary contributors. If they don't have that, they're compromised forever."



Food and Security in the 21st Century

"Because of investments in developing countries, the U.S. could count on those nations to be friendly and open to trade and working with us. It could be argued that our inability to continue investment in human capital on the scale of the 1960s and 1970s has contributed to instability in many places today and hostility to the United States."

"Poverty breeds discontent and desperation. Poverty and despair are the breeding grounds of instability and terrorism. Since the beginning of human history, adequacy of food supply has determined the strengths of clans, tribes and nations. And all too often they have gone to war to assure their food supply."

"The CIA for decades has devoted considerable information collection and analytical resources to assessing global food supplies. We also focused our efforts on water supplies and conducted studies on areas where we believed cross-border conflicts were likely to break out, as one or another sought to acquire more water."

"The Syrian Minister of Agriculture received his PhD from Texas A&M. Before 9/11 he went on Syrian television and stated, 'All the policies I am pursuing are the result of what I learned in America.' That was the investment we were making. What if we had been able to continue it?"

"The United States was the key influence in developing the Indian agricultural university system, the key contributor to the African agricultural universities, and to Asian and Latin American agricultural universities as well. But such U.S. programs are now a pale shadow of what they once were. Science has disappeared. Human capital development has disappeared. And the investments for long-term institution building have nearly disappeared."

"U.S. agriculture contributes about $1 trillion to our GDP. Twenty-two percent of all U.S. jobs are related to agriculture. If any part of the food chain were hit by contaminated substances, there could be staggering economic losses. Not to mention the catastrophic health and human effects."

"Since 9/11, there have been far greater safety concerns over our food supply than ever before, and with good reason. A bioterrorism attack involving crops or livestock has never been a more realistic possibility than now."

"Too often government's response to conflict has been to say that the problem is a difference in religion or culture or politics or security issues, and that such problems can be solved only through diplomacy and political means. And that's often true. But I would tell you that I think America's universities are too often excluded from participating in and contributing to possible solutions in these situations."

Just six weeks after his address at the Norman E. Borlaug International Symposium, Robert Gates was confirmed as the new United States Secretary of Defense. Here, Dr. Gates answers questions during his Senate confirmation hearing.

A Conversation On...
Controversies and Challenges for the Future

1995 World Food Prize Laureate Dr. Hans Herren (far left) is joined on the panel by (l-r) Dr. Robert Watson, Dr. Pedro Sanchez and Dr. Calestous Juma.

2001 World Food Prize Laureate Per Pinstrup-Andersen moderates the panel.

2003 World Food Prize Laureate Pedro Sanchez addresses a question.

Prof. Zhangliang Chen
President,
China Agricultural University
China

"I believe transgenic is organic. We transfer genes, and genes are organic. The products are protein, and protein is organic. There is no reason for any organization in the world to discriminate GM crops from organic."

China's Green Revolution: The Past and the Future

"Each year 40,000 to 50,000 people in China are poisoned because of pesticides. It's family-based, small-land system; the people use pesticide out of a bag and many are poisoned. 400 to 500 people are killed. And you see reduced pesticide use on transgenic crops, and you see less farmers get poisoned in those transgenic fields. But then many people say, 'Are you sure it's safe?' And they're not allowed to use crops."

"China imports soybeans from America, and they contain GM. We have been using that for over ten years, and no case has been reported of anything toxic. Over 2 billion people, including the United States, Argentina, Brazil, Canada and China, have been using GM crops for six to ten years. There's no case to show that it's toxic for human beings."

"The lesson we should learn is from recombinant DNA drugs, from recombinant interferon, from recombinant EPO, from recombinant insulin: people have no problems transferring these genes or injecting this protein into human beings – no problem with that. So what's the problem when we eat it?"

"From 1949 to 1985 was the biggest production in China because of breeding and fertilizer and pesticides. Before that we were farming organically. If we really return to organic agriculture, that means production will be 100 million tons each year – so how can we feed 1.3 billion people? I don't know that it's the future, but I don't think we can get rid of fertilizer or pesticides."

"I hope this 'Luxury Syndrome' could be changed. I guess it's because people are stuffed – they don't know the hungry people's feeling."

Dr. Pedro Sanchez

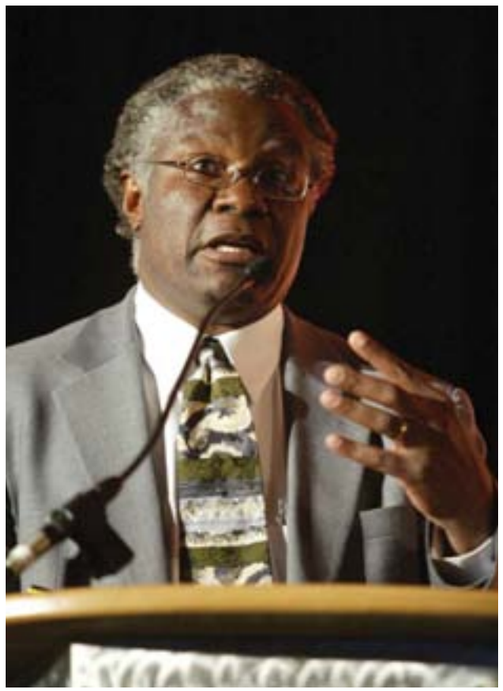
Co-Chair, United Nations Millennium Development Goals Task Force on Hunger
2003 World Food Prize Laureate
United States

"Ninety-two percent of the 815 million hungry people do not starve to death. They die of malnutrition-related diseases, not famines and wars. But our foreign aid is backwards. A major donor in Ethiopia spent $5 million for fighting chronic malnutrition and $400 million for acute hunger. Somehow we got it out of balance."

Dr. Calestous Juma

Director, Science, Technology & Globalization Project
Belfer Center at Harvard University
Kenya

"The Green Revolution hasn't worked very well in Africa because we paid too much attention to the technological side and too little attention to the institutional aspects."



"The African Green Revolution is Definitely On"

"Some agencies are focusing on market-based development but forget that many of these people are not even in the market. They first need to be helped with investments to get out of poverty traps before they can enter markets and take advantage of positive market forces."

"If you invest $40 per family in Malawi in subsidized fertilizer, subsidized small-scale water management equipment, subsidized hybrid seed, that is effective. If you feed that family with food aid, it will cost $400. We have to look at real efficiencies."

"There are 100,000 villages in hunger hot spots in Africa, so the scaling-up challenge is immense – how to go from 78 villages to 100,000. That's really beyond any one institution's capacity."

"In the Millennium Village in Kenya, food production increased 3.5 times in the first year. In Ethiopia it increased 8.4 times. In Rwanda, it increased 6.7 times. In Malawi, 11.4 times. For the first time, 120,000 people in Africa are no longer hungry and have enough to eat."

"What you do with the surplus is key. Cereal banks are being used. Agrodealers are going. Flour mills are going. School feeding programs are going. Village trucks take things to market. The transformation from sub-subsistence farming to small-scale entrepreneurship is the key – and that's beginning to happen."

Technology & Innovation to Renew African Agriculture

"We are starting to see very different ways of thinking about technology, which is to think about Africa's own problems and then to think about the technological options open to Africa to solve those problems."

"We're focusing on new roles for universities, because you can't effectively engage in a knowledge-intensive activity like biotechnology without research, education, and commercialization. If African presidents want to spend any political capital, university reform is critical – and more important than dealing with ethnic conflicts or ethnic differences within countries."

"In the early stages of the African states we focused on the social sciences to get people who could run the governments. Today the challenge is getting people who could run an economy. We need more technical people, more engineering scientists, and more women in the technical sciences."

"The diplomatic community from Africa should think about relations with the United States in technological terms, given the U.S. strength in science and technology. For African presidents today, there's a lot of willingness to take risk with new technologies. The challenge is getting those technologies in place."

Dr. Hans Herren

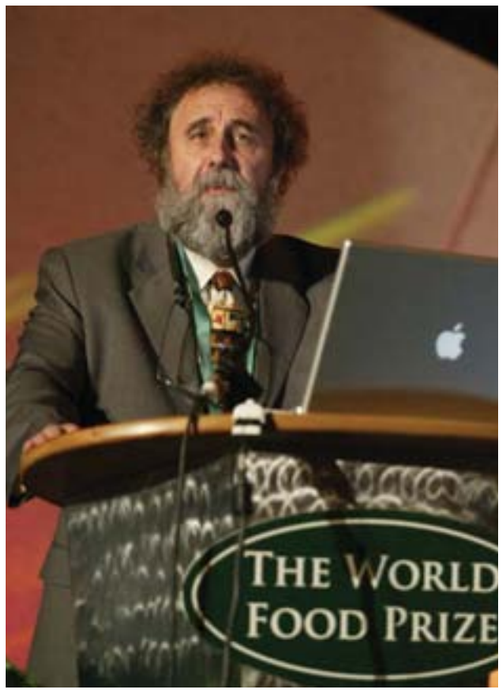
President, Millennium Institute
Co-Chair, International Assessment of Agricultural Science and Technology for Development (IAASTD)
1995 World Food Prize Laureate
Switzerland

"Using a lot of synthetic fertilizers and nitrogen, we created dead seas all over. Using too many chemicals, we created resistant pests. And so we had to use even more chemicals and, now, GMOs - because we have often destroyed natural systems beyond self-repair and self-control."

Dr. Robert Watson

Director, Environmentally & Socially Sustainable Development
The World Bank
Director, IAASTD
United Kingdom

"Some think bioenergy is the savior to help rural development, energy security and climate change. There's equally evidence this is the wrong path, at least food-sourced bioethanol or biodiesel. Using enzymes and cellulosic technology has incredible potential, but it's ten or fifteen years off."



Agriculture and Food Production: Quo Vadis?

"We cannot ignore that we eat too much of the wrong mix of food. We are actually eating ourselves sick."

"The way we buy food and the cheap food prices we demand, we are actually asking for more monocrops rather than multicrops and medium-size farms. And we are building over the best land over the world in many places."

"Yields are not increasing; we've reached a plateau. Biotechnology may help, but so far it has not done much in terms of yield increase. It may reduce cost of production; it may reduce pesticide application. But we're still waiting for a real yield increase."

"Since about 1988, we are consuming more resources than the earth can compensate for each year. In 1987, we started in mid-December using them up. Since October 9, in 2006, we have been using up nonrenewable resources. Where are we going to be next year? Or in ten years from now?"

"The biggest challenge is how agriculture will deal with climate change. In California this year the apples were cooked on the tree, 117° for several days. It never happened before. If it's too hot or too cold, crops won't grow or we have to again make modifications and changes. Technology will be needed, but we should not think that technology can fix everything."

Assessing Agricultural Science for Development

"The Millennium Ecosystem Assessment asked, 'How could you feed the world?' All our hypothetical scenarios showed crop lands and pasture will go up in developing countries and down in industrial regions. But this comes at incredible cost – a significant amount of tropical forest was actually destroyed."

"Every scenario we've looked at argues demand for water is going to grow. Yet available water will stay roughly constant. Precipitation globally will go up because of climate change, but not significantly. It's one of the biggest challenges the world faces."

"It's totally uneconomic to use maize for ethanol. To convert 20 percent of world fossil fuel use into liquid biofuels, even with sugar, would take a huge amount of land. Given that we have to significantly increase both the quantity and quality of food production, the challenge is – where can bioenergy be socially and environmentally sustainable?"

"On the IAASTD, we have people that normally will not come in the room with each other, because they have such divergent views on issues like trade and genetic modification. Our assessment is trying to pull together the widest set of stakeholders to see if we can come up with a common vision of agriculture."

The World Food Prize Global Youth Institute

A Dialogue with the Next Generation in the Fight Against Hunger

Students present research papers, discuss cutting-edge issues in food security and hear from Borlaug-Ruan International Interns on their "life-changing" experiences.

Roughly 80 high school students attend the Norman E. Borlaug International Symposium and are given the opportunity to interact with experts in food and agriculture, including Dr. Borlaug, at the World Food Prize Global Youth Institute.

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